

WHAT IS CLAIMED IS:

1. A semiconductor device comprising:

a pair of substrates and a liquid crystal layer sandwiched by the pair of
5 substrates,

a pixel electrode formed on one of the pair of substrates; and

a capacitor formed by a common electrode, an oxide film of at least a
portion of the common electrode, and the pixel electrode formed on the oxide film.

wherein an electric field parallel to the face of the substrates is applied
10 between the pixel electrode and the common electrode.

2. A device according to claim 1, wherein the common electrode comprises a
material which can be anodically oxidized.

15 3. A device according to claim 1, wherein the oxide film is formed through an
anodic oxidation process in which the applied voltage / voltage supply time ratio is
equal to or greater than 11 V/min.

4. A video camera, a digital camera, a projector, a goggle type display, a car
20 navigation system, a personal computer, or a portable information terminal using the
semiconductor device according to claim 1.

5. A semiconductor device comprising:

a pair of substrates and a liquid crystal layer sandwiched by the pair of

substrates;

a pixel electrode formed on one of the pair of substrates; and

a capacitor formed by a common electrode, an anodic oxide film of at least a portion of the common electrode, and the pixel electrode formed on the anodic oxide
5 film,

wherein the liquid crystal layer is surrounded by a sealing material, and spacers are formed in the region in which the sealing material is formed, and

wherein an electric field parallel to the face of the substrates is applied between the pixel electrode and the common electrode.

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6. A device according to claim 5, wherein the oxide film is formed through an anodic oxidation process in which the applied voltage / voltage supply time ratio is equal to or greater than 11 V/min.

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7. A video camera, a digital camera, a projector, a goggle type display, a car navigation system, a personal computer, or a portable information terminal using the semiconductor device according to claim 5.

8. A semiconductor device comprising:

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a pair of substrates and a liquid crystal layer sandwiched by the pair of substrates;

a pixel electrode formed on one of the pair of substrates;

a capacitor formed by a common electrode, an anodic oxide film of at least a portion of the common electrode, and the pixel electrode formed on the anodic oxide

film;

a spacer formed in a region between a pixel portion, in which the pixel electrode is formed, and a driver circuit; and

a spacer formed in a region in which an element of the driver circuit does
5 not exist,

wherein an electric field parallel to the face of the substrates is applied between the pixel electrode and the common electrode.

9. Advice according to claim 8, wherein the oxide film is formed through an
10 anodic oxidation process in which the applied voltage / voltage supply time ratio is equal to or greater than 11 V/min.

10. A video camera, a digital camera, a projector, a goggle type display, a car navigation system, a personal computer, or a portable information terminal using the
15 semiconductor device according to claim 8.

11. A semiconductor device comprising:

a pair of substrates and a liquid crystal layer sandwiched by the pair of substrates;

20 a pixel electrode formed on one substrate out of the pair of substrates.

a capacitor formed by a common electrode, an anodic oxide film of at least a portion of the common electrode, and the pixel electrode formed on the anodic oxide film; and

a spacer over a contact portion of the pixel electrode.

wherein an electric field parallel to the face of the substrates is applied between the pixel electrode and the common electrode;

12. Advice according to claim 11, wherein the oxide film is formed through an anodic oxidation process in which the applied voltage / voltage supply time ratio is equal to or greater than 11 V/min.

13. A video camera, a digital camera, a projector, a goggle type display, a car navigation system, a personal computer, or a portable information terminal using the semiconductor device according to claim 11.

14. A method of manufacturing a semiconductor device, comprising steps of:
forming a resin film on an upper part of a TFT;
forming a common electrode on the resin film;
forming an oxide film of the common electrode; and
forming a pixel electrode covering at least a portion of the oxide film.
wherein a capacitor is formed by the common electrode, the oxide film of the common electrode, and the pixel electrode.

15. A method according to claim 14, wherein sputtering is used for the step of forming the inorganic film on the resin film.

16. A method according to claim 14, wherein the step of forming the oxide film is an anodic oxidation process in which the applied voltage / voltage supply time ratio

is equal to or greater than 11 V/min.

17. A method of manufacturing a semiconductor device, comprising steps of:

forming a resin film on a TFT;

5 forming an inorganic film on the resin film;

forming a common electrode on the resin film;

forming an oxide film of the common electrode; and

forming a pixel electrode covering at least a portion of the oxide film.

10 wherein a capacitor is formed by the common electrode, the oxide film of the common electrode, and the pixel electrode.

18. A method according to claim 17, wherein sputtering is used for the step of forming the inorganic film on the resin film.

15 19. A method according to claim 17, wherein the step of forming the oxide film is an anodic oxidation process in which the applied voltage / voltage supply time ratio is equal to or greater than 11 V/min.